
Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)

217-9197 (toll free).

Reviewer: markspencer

Timestamp: [year=2009; month=7; day=2; hr=8; min=17; sec=5; ms=90;]

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Reviewer Comments:
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1.
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E249 Order Sequence Error <211> -> <213>; Expected Mandatory

Tag: <212> in SEQID (9)

E249 Order Sequence Error <211> -> <213>; Expected Mandatory

Tag: <212> in SEQID (10)

E249 Order Sequence Error <211> -> <213>; Expected Mandatory

Tag: <212> in SEQID (11)

E249 Order Sequence Error <211> -> <213>; Expected Mandatory

Tag: <212> in SEQID (12)

E249 Order Sequence Error <211> -> <213>; Expected Mandatory

Tag: <212> in SEQID (13)

E249 Order Sequence Error <211> -> <213>; Expected Mandatory

Tag: <212> in SEQID (14)

E249 Order Sequence Error <211> -> <213>; Expected Mandatory

Tag: <212> in SEQID (15)

E250 Structural Validation Error; Sequence listing may not be

indexable

<210> 9

<211> 527

<213> unknown

<220>

<223> protein pl2 of T2 phage

* * * * * * * *

For SEQ ID # 9 through 15, numeric identifier "<212> Type" is mandatory. Please insert numeric identifier <212>, with the appropriate response, between numeric identifiers <211> and <213> for each SEQ ID # 9 through

| 2. | | | | | | | | | | |
|------|------------|----|---------|-------|----|-------|----|-----|----|------|
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (1) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (2) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (3) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (4) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (5) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (6) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (7) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (8) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (9) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (10) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (11) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (12) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (13) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (14) |
| W213 | Artificial | or | Unknown | found | in | <213> | in | SEQ | ID | (15) |

Validated By CRFValidator v 1.0.3

Application No: 10583415 Version No: 2.0

Input Set:

Output Set:

Started: 2009-06-24 14:16:41.386

Finished: 2009-06-24 14:16:43.604

Elapsed: 0 hr(s) 0 min(s) 2 sec(s) 218 ms

Total Warnings: 15

Total Errors: 8

No. of SeqIDs Defined: 15

Actual SeqID Count: 15

| Err | or code | Error Description |
|-----|---------|--|
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (1) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (2) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (3) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (4) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (5) |
| M | 213 | Artificial or Unknown found in <213> in SEQ ID (6) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (7) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (8) |
| E | 249 | Order Sequence Error <211> -> <213>; Expected Mandatory Tag: <212> in SEQID (9) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (9) |
| E | 249 | Order Sequence Error <211> -> <213>; Expected Mandatory Tag: <212> in SEQID (10) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (10) |
| E | 249 | Order Sequence Error <211> -> <213>; Expected Mandatory Tag: <212> in SEQID (11) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (11) |
| E | 249 | Order Sequence Error <211> -> <213>; Expected Mandatory Tag: <212> in SEQID (12) |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (12) |
| E | 249 | Order Sequence Error <211> -> <213>; Expected Mandatory Tag: <212> in SEQID (13) |

Input Set:

Output Set:

Started: 2009-06-24 14:16:41.386

Finished: 2009-06-24 14:16:43.604

Elapsed: 0 hr(s) 0 min(s) 2 sec(s) 218 ms

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| Err | or code | Error Description | | | | | | | | | | |
|-----|---------|--|--|--|--|--|--|--|--|--|--|--|
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (13) | | | | | | | | | | |
| E | 249 | Order Sequence Error <211> -> <213>; Expected Mandatory Tag: <212> in SEQID (14) | | | | | | | | | | |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (14) | | | | | | | | | | |
| E | 249 | Order Sequence Error <211> -> <213>; Expected Mandatory Tag: <212> in SEQID (15) | | | | | | | | | | |
| W | 213 | Artificial or Unknown found in <213> in SEQ ID (15) | | | | | | | | | | |
| E | 250 | Structural Validation Error; Sequence listing may not be indexable | | | | | | | | | | |

SEQUENCE LISTING

| <110> | MEYER, ROMAN SCHUTZ, MICHAEL GRALLERT, HOLGER GRASSL, RENATE MILLER, STEFAN | |
|--------|---|----|
| <120> | ENDOTOXIN DETECTION METHOD | |
| <130> | DEBE:067US | |
| <140> | 10/583,415 | |
| <141> | 2006-06-15 | |
| <150> | PCT/DE2004/002778 | |
| <151> | 2004-12-20 | |
| <150> | DE 103 60 844.3 | |
| <151> | 2003-12-20 | |
| <160> | 15 | |
| <170> | PatentIn version 3.3 | |
| <210> | 1 | |
| <211> | 78 | |
| <212> | DNA | |
| <213> | artificial sequence | |
| <220> | | |
| <223> | Synthetic primer | |
| <400> | 1 | |
| gaagga | acta gtcatatggc tagctggagc cacccgcagt tcgaaaaagg cgccagtaat | 60 |
| aataca | tatc aacacgtt | 78 |
| | | |
| <210> | 2 | |
| <211> | 54 | |
| <212> | DNA | |
| <213> | artificial sequence | |
| <220> | | |
| <223> | Synthetic primer | |
| <400> | 2 | |
| acgcgc | aaag cttgtcgacg gatcctatca ttcttttacc ttaattatgt agtt | 54 |
| | | |
| <210> | 3 | |
| <211> | 78 | |
| <212> | DNA | |
| <213> | artificial sequence | |

```
<223> Synthetic primer
<400> 3
gaaggaacta gtcatatggc ttgttggagc cacccgcagt tcgaaaaagg cgccagtaat
                                                                     60
aatacatatc aacacgtt
                                                                     78
<210> 4
<211> 78
<212> DNA
<213> artificial sequence
<220>
<223> Synthetic primer
<400> 4
gaaggaacta gtcatatggc tagctggagc cacccgcagt tcgaaaaagg cgcctgtaat
                                                                     60
aatacatatc aacacgtt
                                                                     78
<210> 5
<211> 19
<212> PRT
<213> artificial sequence
<220>
<223> strep tag
<400> 5
Met Ala Ser Trp Ser His Pro Gln Phe Glu Lys Gly Ala Ser Asn Asn
                                   10
                                                       15
Thr Tyr Gln
<210> 6
<211> 19
<212> PRT
<213> artificial sequence
<220>
<223> strep tag
<400> 6
Met Ala Cys Trp Ser His Pro Gln Phe Glu Lys Gly Ala Ser Asn Asn
                                   10
                                                       15
1
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Thr Tyr Gln

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<210> 7
<211> 19
<212> PRT
<213> artificial sequence
<220>
<223> strep tag
<400> 7
Met Ala Ser Trp Ser His Pro Gln Phe Glu Lys Gly Ala Cys Asn Asn
1
                5
                                    10
                                                        15
Thr Tyr Gln
<210> 8
<211> 539
<212> PRT
<213> artificial sequence
<220>
<223> T4p12 with strep tag
<400> 8
Met Ala Ser Trp Ser His Pro Gln Phe Glu Lys Gly Ala Ser Asn Asn
                                    10
1
                                                        15
Thr Tyr Gln His Val Ser Asn Glu Ser Arg Tyr Val Lys Phe Asp Pro
            20
                                25
                                                    30
Thr Asp Thr Asn Phe Pro Pro Glu Ile Thr Asp Val Gln Ala Ala Ile
        35
                            40
                                                45
Ala Ala Ile Ser Pro Ala Gly Val Asn Gly Val Pro Asp Ala Ser Ser
    50
                        55
                                            60
Thr Thr Lys Gly Ile Leu Phe Leu Ala Thr Glu Glu Val Ile Asp
65
                    70
                                        75
                                                            80
Gly Thr Asn Asn Thr Lys Ala Val Thr Pro Ala Thr Leu Ala Thr Arg
                85
                                    90
                                                        95
Leu Ser Tyr Pro Asn Ala Thr Glu Ala Val Tyr Gly Leu Thr Arg Tyr
```

105

110

| Ser Thr | Asp A | sp Glu | Ala I | | Ala 120 | Gly | Val | Asn | Asn | Glu 125 | Ser | Ser | Ile |
|----------------|----------------|---------------|--------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Thr Pro | | ys Phe | | /al / | Ala | Leu | Asn | Asn | Val 140 | Phe | Glu | Thr | Arg |
| Val Ser 145 | Thr G | lu Ser | Ser A | Asn (| Gly | Val | Ile | Lys 155 | Ile | Ser | Ser | Leu | Pro 160 |
| Gln Ala | Leu A | la Gly 165 | Ala A | Asp A | Asp | Thr | Thr 170 | Ala | Met | Thr | Pro | Leu 175 | Lys |
| Thr Glr | | eu Ala 80 | Val I | Lys : | Leu | Ile 185 | Ala | Gln | Ile | Ala | Pro 190 | Ser | Lys |
| Asn Ala | 1 Ala T 195 | hr Glu | Ser G | | Gln 200 | Gly | Val | Ile | Gln | Leu 205 | Ala | Thr | Val |
| Ala Glr 210 | | rg Gln | _ | Γhr : 215 | Leu | Arg | Glu | Gly | Tyr 220 | Ala | Ile | Ser | Pro |
| Tyr Thr 225 | Phe M | et Asn | Ser I 230 | Γhr <i>i</i> | Ala | Thr | Glu | Glu 235 | Tyr | Lys | Gly | Val | Ile 240 |
| Lys Leu | _ | 245 | | | | | 250 | | | | | 255 | |
| Val Thr | 2 | 60 | | | | 265 | | | | | 270 | | |
| Gly Val | 275 | | | : | 280 | | _ | | | 285 | _ | _ | |
| Ala Ser 290 | | | 2 | 295 | | | | | 300 | | | | |
| Gly Glr | | | 310 | | | | | 315 | | | | | 320 |
| Ala Ser | ату С | 325 | ASH I | т те | T 11 T. | дΤλ | 330 | val | lica | riet | T11T. | 335 | ЭΤΆ |

Tyr Ile Gln Gly Lys Arg Val Val Thr Gln Asn Glu Ile Asp Arg Thr

340 345 350

Ile Pro Val Gly Ala Ile Met Met Trp Ala Ala Asp Ser Leu Pro Ser 355 360 365

Asp Ala Trp Arg Phe Cys His Gly Gly Thr Val Ser Ala Ser Asp Cys 370 380

Pro Leu Tyr Ala Ser Arg Ile Gly Thr Arg Tyr Gly Gly Ser Ser Ser 385 390 395 400

Asn Pro Gly Leu Pro Asp Met Arg Gly Leu Phe Val Arg Gly Ser Gly 405 410 415

Arg Gly Ser His Leu Thr Asn Pro Asn Val Asn Gly Asn Asp Gln Phe
420 425 430

Gly Lys Pro Arg Leu Gly Val Gly Cys Thr Gly Gly Tyr Val Gly Glu 435 440 445

Val Gln Lys Gln Gln Met Ser Tyr His Lys His Ala Gly Gly Phe Gly 450 455 460

Glu Tyr Asp Asp Ser Gly Ala Phe Gly Asn Thr Arg Arg Ser Asn Phe 465 470 480

Val Gly Thr Arg Lys Gly Leu Asp Trp Asp Asn Arg Ser Tyr Phe Thr 485 490 495

Asn Asp Gly Tyr Glu Ile Asp Pro Ala Ser Gln Arg Asn Ser Arg Tyr 500 505 510

Thr Leu Asn Arg Pro Glu Leu Ile Gly Asn Glu Thr Arg Pro Trp Asn 515 520 525

Ile Ser Leu Asn Tyr Ile Ile Lys Val Lys Glu 530 535

<210> 9

<211> 527

<213> unknown

<220>

<223> protein p12 of T2 phage

Met Ser Asn Asn Thr Tyr Gln His Val Ser Asn Glu Ser Arg Tyr Val

1 10 15

Lys Phe Asp Pro Thr Asp Thr Asn Phe Pro Pro Glu Ile Thr Asp Val 20 25 30

Gln Ala Ala Ile Ala Ala Ile Ser Pro Ala Gly Val Asn Gly Val Pro
35 40 45

Asp Ala Ser Ser Thr Thr Lys Gly Ile Leu Phe Leu Ala Thr Glu Gln 50 60

Glu Val Ile Asp Gly Thr Asn Asn Thr Lys Ala Val Thr Pro Ala Thr 65 70 75 80

Leu Ala Thr Arg Leu Ser Tyr Pro Asn Ala Thr Glu Ala Val Tyr Gly
85 90 95

Leu Thr Arg Tyr Ser Thr Asp Asp Glu Ala Ile Ala Gly Val Asn Asn 100 105 110

Glu Ser Ser Ile Thr Pro Ala Lys Phe Thr Val Ala Leu Asn Asn Val
115 120 125

Phe Glu Thr Arg Val Ser Thr Glu Ser Ser Asn Gly Val Ile Lys Ile 130 135 140

Ser Ser Leu Pro Gln Ala Leu Ala Gly Ala Asp Asp Thr Thr Ala Met
145 150 150

Thr Pro Leu Lys Thr Gln Gln Leu Ala Val Lys Leu Ile Ala Gln Ile 165 170 175

Ala Pro Ser Lys Asn Ala Ala Thr Glu Ser Glu Gln Gly Val Ile Gln
180 185 190

Leu Ala Thr Val Ala Gln Ala Arg Gln Gly Thr Leu Arg Glu Gly Tyr
195 200 205

Ala Ile Ser Pro Tyr Thr Phe Met Asn Ser Thr Ala Thr Glu Glu Tyr 210 220

| Lys 225 | Gly | Val | Ile | Lys | Leu 230 | Gly | Thr | Gln | Ser | Glu 235 | Val | Asn | Ser | Asn | Asn 240 |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Ala | Ser | Val | Ala | Val 245 | Thr | Gly | Ala | Thr | Leu 250 | Asn | Gly | Arg | Gly | Ser 255 | Thr |
| Thr | Ser | Met | Arg 260 | Gly | Val | Val | Lys | Leu 265 | Thr | Thr | Thr | Ala | Gly 270 | Ser | Gln |
| Ser | Gly | Gly 275 | Asp | Ala | Ser | Ser | Ala 280 | Leu | Ala | Trp | Asn | Ala 285 | Asp | Val | Ile |
| His | Gln 290 | Arg | Gly | Gly | Gln | Thr 295 | Ile | Asn | Gly | Thr | Leu 300 | Arg | Ile | Asn | Asn |
| Thr 305 | Leu | Thr | Ile | Ala | Ser 310 | Gly | Gly | Ala | Asn | Ile 315 | Thr | Gly | Thr | Val | Asn 320 |
| Met | Thr | Gly | Gly | Tyr 325 | Ile | Gln | Gly | Lys | Arg 330 | Val | Val | Thr | Gln | Asn 335 | Glu |
| Ile | Asp | Arg | Thr 340 | Ile | Pro | Val | Gly | Ala 345 | Ile | Met | Met | Trp | Ala 350 | Ala | Asp |
| Ser | Leu | Pro 355 | Ser | Asp | Ala | Trp | Arg 360 | Phe | Cys | His | Gly | Gly 365 | Thr | Val | Ser |
| Ala | Ser 370 | Asp | Cys | Pro | Leu | Tyr 375 | Ala | Ser | Arg | Ile | Gly 380 | Thr | Arg | Tyr | Gly |
| Gly 385 | Thr | Ser | Ser | Asn | Pro 390 | Gly | Leu | Pro | Asp | Met 395 | Arg | Gly | Leu | Phe | Val 400 |
| Arg | Gly | Ser | Gly | Arg 405 | Gly | Ser | His | Leu | Thr 410 | Asn | Pro | Asn | Val | Asn 415 | Gly |
| Asn | Asp | Gln | Phe 420 | Gly | Lys | Pro | Arg | Leu 425 | Gly | Val | Gly | Cys | Thr 430 | Gly | Gly |
| Tyr | Val | Gly | Glu | Val | Gln | Lys | Gln | Gln | Met | Ser | Tyr | His | Lys | His | Ala |

Gly Gly Phe Gly Glu Tyr Asp Asp Ser Gly Ala Phe Gly Asn Thr Arg Arg Ser Asn Phe Val Gly Thr Arg Lys Gly Leu Asp Trp Asp Asn Arg Ser Tyr Phe Thr Asn Asp Gly Tyr Glu Ile Asp Pro Ala Ser Gln Arg Asn Ser Arg Tyr Thr Leu Asn Arg Pro Glu Leu Ile Gly Asn Glu Thr Arg Pro Trp Asn Ile Ser Leu Asn Tyr Ile Ile Lys Val Lys Glu <210> 10 <211> 527 <213> unknown <220> <223> protein pl2 of T4 phage <400> 10 Met Ser Asn Asn Thr Tyr Gln His Val Ser Asn Glu Ser Arg Tyr Val Lys Phe Asp Pro Thr Asp Thr Asn Phe Pro Pro Glu Ile Thr Asp Val His Ala Ala Ile Ala Ile Ser Pro Ala Gly Val Asn Gly Val Pro Asp Ala Ser Ser Thr Thr Lys Gly Ile Leu Phe Ile Pro Thr Glu Gln Glu Val Ile Asp Gly Thr Asn Asn Thr Lys Ala Val Thr Pro Ala Thr Leu Ala Thr Arg Leu Ser Tyr Pro Asn Ala Thr Glu Thr Val Tyr Gly Leu Thr Arg Tyr Ser Thr Asn Asp Glu Ala Ile Ala Gly Val Asn Asn

| Glu | Ser | Ser 115 | Ile | Thr | Pro | Ala | Lys 120 | Phe | Thr | Val | Ala | Leu 125 | Asn | Asn | Ala |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Phe | Glu 130 | Thr | Arg | Val | Ser | Thr 135 | Glu | Ser | Ser | Asn | Gly 140 | Val | Ile | Lys | Ile |
| Ser 145 | Ser | Leu | Pro | Gln | Ala 150 | Leu | Ala | Gly | Ala | Asp 155 | Asp | Thr | Thr | Ala | Met 160 |
| Thr | Pro | Leu | Lys | Thr 165 | Gln | Gln | Leu | Ala | 11e 170 | Lys | Leu | Ile | Ala | Gln 175 | Ile |
| Ala | Pro | | Glu 180 | | Thr | | | | | | | _ | Val 190 | Val | Gln |
| Leu | Ala | Thr 195 | Val | Ala | Gln | Val | Arg 200 | Gln | Gly | Thr | Leu | Arg 205 | Glu | Gly | Tyr |
| Ala | Ile 210 | Ser | Pro | Tyr | Thr | Phe 215 | Met | Asn | Ser | Ser | Ser 220 | Thr | Glu | Glu | Tyr |
| Lys 225 | Gly | Val | Ile | Lys | Leu 230 | Gly | Thr | Gln | Ser | Glu 235 | Val | Asn | Ser | Asn | Asn 240 |
| Ala | Ser | Val | Ala | Val 245 | Thr | Gly | Ala | Thr | Leu 250 | Asn | Gly | Arg | Gly | Ser 255 | Thr |
| Thr | Ser | Met | Arg 260 | Gly | Val | Val | Lys | Leu 265 | Thr | Thr | Thr | Ala | Gly 270 | Ser | Gln |
| Ser | Gly | Gly 275 | Asp | Ala | Ser | Ser | Ala 280 | Leu | Ala | Trp | Asn | Ala 285 | Asp | Val | Ile |
| | | | | | | | | | | | | | | | |
| Gln | Gln 290 | Arg | Gly | Gly | Gln | Ile 295 | Ile | Tyr | Gly | Thr | Leu 300 | Arg | Ile | Glu | Asp |
| | 290 | | Gly | | | 295 | | | | | 300 | | | | |

Ile Asp Arg Thr Ile Pro Val Gly Ala Ile Met Met Trp Ala Ala Asp Ser Leu Pro Ser Asp Ala Trp Arg Phe Cys His Gly Gly Thr Val Ser Ala Ser Asp Cys Pro Leu Tyr Ala Ser Arg Ile Gly Thr Arg Tyr Gly Gly Asn Pro Ser Asn Pro Gly Leu Pro Asp Met Arg Gly Leu Phe Val Arg Gly Ser Gly Arg Gly Ser His Leu Thr Asn Pro Asn Val Asn Gly Asn Asp Gln Phe Gly Lys Pro Arg Leu Gly Val Gly Cys Thr Gly Gly Tyr Val Gly Glu Val Gln Ile Gln Gln Met Ser Tyr His Lys His Ala Gly Gly Phe Gly Glu His Asp Asp Leu Gly Ala Phe Gly Asn Thr Arg Arg Ser Asn Phe Val Gly Thr Arg Lys Gly Leu Asp Trp Asp Asn Arg Ser Tyr Phe Thr Asn Asp Gly Tyr Glu Ile Asp Pro Glu Ser Gln Arg Asn Ser Lys Tyr Thr Leu Asn Arg Pro Glu Leu Ile Gly Asn Glu Thr Arg Pro Trp Asn Ile Ser Leu Asn Tyr Ile Ile Lys Val Lys Glu <210> 11 <211> <213> unknown <220> <223> protein pl2 of PP01 phage

<400> 11

| Met 1 | Ser | Asn | Asn | Thr 5 | Tyr | Gln | His | Val | Ser 10 | Asn | Glu | Ser | Lys | Tyr 15 | Val |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Lys | Phe | Asp | Pro 20 | Val | Gly | Ser | Asn | Phe 25 | Pro | Asp | Thr | Val | Thr 30 | Thr | Val |
| Gln | Ser | Ala 35 | Leu | Ser | Lys | Ile | Ser 40 | Asn | Ile | Gly | Val | Asn 45 | Gly | Ile | Pro |
| Asp | Ala 50 | Ser | Met | Glu | Val | Lys 55 | Gly | Ile | Ala | Met | Ile 60 | Ala | Ser | Glu | Gln |
| Glu 65 | Val | Leu | Asp | Gly | Thr 70 | Asn | Asn | Ser | Lys | Ile 75 | Val | Thr | Pro | Ala | Thr 80 |
| Leu | Ala | Thr | Arg | Leu 85 | Leu | Tyr | Pro | Asn | Ala 90 | Thr | Glu | Thr | Lys | Tyr 95 | Gly |
| Leu | Thr | Arg | Tyr 100 | Ser | Thr | Asn | Glu | Glu 105 | Thr | Leu | Glu | Gly | Ser 110 | Asp | Asn |
| Asn | Ser | Ser 115 | Ile | Thr | Pro | Gln | Lys 120 | Leu | Lys | Tyr | His | Thr 125 | Asp | Asp | Val |
| Phe | Gln 130 | Asn | Arg | Tyr | Ser | Ser 135 | Glu | Ser | Ser | Asn | Gly 140 | Val | Ile | Lys | Ile |
| Ser 145 | Ser | Thr | Pro | Ala | Ala 150 | Leu | Ala | Gly | Val | Asp 155 | Asp | Thr | Thr | Ala | Met 160 |
| Thr | Pro | Leu | Lys | Thr 165 | Gln | Lys | Leu | Ala | Ile 170 | Lys | Leu | Ile | Ser | Gln 175 | Ile |
| Ala | Pro | Ser | Glu 180 | Asp | Thr | Ala | Ser | Glu 185 | Ser | Val | Arg | Gly | Val 190 | Val | Gln |
| Leu | Ser | Thr 195 | Val | Ala | Gln | Thr | Arg 200 | Gln | Gly | Thr | Leu | Arg 205 | Glu | Gly | Tyr |
| Ala | Ile 210 | Ser | Pro | Tyr | Thr | Phe 215 | Met | Asn | Ser | Val | Ala 220 | Thr | Gln | Glu | Tyr |

Lys Gly Val Ile Arg Leu Gly Thr Gln Ser Glu Ile Asn Ser Asn Leu

225 230 235 240

Gly Asp Val Ala Val Thr Gly Glu Thr Leu Asn Gly Arg Gly Ala Thr 255

Gly Ser Met Arg Gly Val Val Lys Leu Thr Thr Gln Ala Gly Ile Ala 260 265 270